

PATENT CLAIMS

1. Exposure control method for a camera with at least one image sensor in which an image brightness set-point (Hsoll) is preset and control is carried out with reference to this image brightness set-point (Hsoll), wherein control is carried out by adjusting a gradient (α) by controlling the integration time and/or intensification of the image sensor, characterized in that a new gradient is determined from initial gradient α_1 , image brightness set-point Hsoll and current image brightness Hist according to the following formula: $\alpha_2 = \alpha_1 * \text{Hsoll} / \text{Hist}$.
2. Method according to claim 1, characterized in
 - a) that image brightness Hist is compared with a tolerance range (Hsoll1, Hsoll2) around image brightness set-point (Hsoll); and
 - b) a new gradient α_2 is preset in one control step only if image brightness Hist lies outside said tolerance range (Hsoll1, Hsoll2) around image brightness set-point (Hsoll).
3. Method according to claim 1 or 2, characterized in that a preset characteristic of a characteristic (K) of the dependence of image brightness (H) on illumination (B) is taken into consideration when determining new gradient α_2 .
4. Method according to claim 3, characterized in that characteristic K does not run through origin U and new gradient α_2 is determined considering at least one offset value Offs1 according to the following formula: $\alpha_2 = \alpha_1 * (\text{Hsoll} - \text{Offs1}) / (\text{Hist} - \text{Offs1})$.
5. Method according to claim 4, characterized in that for each gradient (α_2 , α_1) a respective offset value (Offs1, Offs2) is provided and new gradient α_2 is determined considering said respective offset values according to the following formula: $\alpha_2 = \alpha_1 * (\text{Hsoll} - \text{Offs1}) / (\text{Hist} - \text{Offs2})$.

6. Exposure control device for a camera with at least one image sensor in which an image brightness set-point H_{soll} is preset and control is carried out with reference to this image brightness set-point H_{soll} , according to a method according to any one of the preceding claims, characterized in that a computer is provided whose tasks include evaluating the images and that at least substantially also controls exposure and image brightness.
7. Device according to claim 6, characterized in that specific, relevant pixels are selected for the purpose of measuring image brightness and image brightness control is substantially carried out with reference to these regions.
8. Device according to any one of claims 6 or 7, characterized in that the computer is provided for computing back (using an adjusted sensitivity) to the current image brightness of the scene the image of which is being formed and for providing this value to the system or to other systems.
9. Use of a method and a device according to any one of the preceding claims for a vehicle environment monitoring camera for motor vehicles.